Issue Paper

Small Deployments, Big Problems

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Recent deployments of military units to overseas non-combat operations—including Somalia, Haiti, Bosnia, and Kosovo—have placed new and unanticipated stresses on the nation's armed services. Yet military leaders find it hard to pinpoint the causes of that stress. This leads many observers to ask: With nearly a half-million personnel on active duty, why does the Army have trouble supporting deployments that require 5,000 to 10,000 people?

RAND Arroyo Center researchers, collaborating with the Army Personnel Command and units at individual installations, have looked into that question for the case of Bosnia. They have found that personnel turbulence is a large part of the answer: Even modest deployments have large cascading effects on the military's dynamic system for managing units and soldiers within them.

This Issue Paper shows how these problems highlight important issues for the Army's deployment policy in general. It explores the amount of turbulence generated by the Bosnia deployment, the factors behind the turbulence, and Army options for addressing it.

WHY DEPLOYMENTS TO BOSNIA ARE PROBLEMATIC

At first glance, Bosnia seems a modest-sized deployment. Its primary force involves only 6,000–7,000 soldiers. But it is a continuing operation that has lasted several years; every 6 to 8 months a new unit rotates to Bosnia, replacing its predecessor. The effects are therefore felt widely across the Army.[1] Another part of the problem is that the process is dynamic; it involves not just

7,000 soldiers but also unit preparation, recovery, personnel exchanges, and so forth. Moreover, it is superimposed as a unit rotation on an individual replacement system. These two systems operate on a different logic—each with its own imperatives—and they do not mesh smoothly. That tension makes it difficult to support successive unit deployments in the context of other global Army requirements.

PEACETIME NONDEPLOYABILITY IS A MAJOR PART OF THE PROBLEM

The driving factor of all that follows is the high rate of peacetime nondeployability in units, across a wide variety of installations and unit types. Table 1 shows the fraction of personnel who were deemed nondeployable for Bosnia. These figures were forecast by RAND using unit and Army-wide data during the summer and fall of 1998;

Table 1
Peacetime Nondeployability Rate for Bosnia

Reason for Nondeployability	Unit/Installation		
	1st Cavalry	10th Mountain	Fort Riley
Nondeployable in wartime	4.0	3.9	3.5
Move required within 135 days	20.0	16.9	21.8
Stabilized (returning from unaccompanied tour)	11.6	18.6	14.7
Total	35.6	39.4	40.0

[1]Rotations for the Bosnia Stabilization Force (SFOR 4–7) commenced at these dates: September 1998, Fort Hood, 1st Cavalry Division; March 1999, Fort Hood, 1st Cavalry Division; August 1999, Forts Drum and Riley, 10th Mountain Division; March 2000, Texas National Guard and Fort Carson.

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each rate represents a prediction of the nondeployability rate that would pertain to the unit at the time it was to deploy forces (September 1998 and March 1999 for 1st Cavalry, August 1999 for 10th Mountain and Fort Riley).

The portion of personnel who could not deploy in wartime hovered around 4 percent, the same rate that is typically found in the official readiness reporting system. The shaded panel shows two other factors that drive up peacetime nondeployability rates. First, current practice dictates that a soldier cannot deploy to Bosnia if he or she is scheduled for a required move within 135 days.[2] This allows a minimum of 90 days in theater, followed by 45 days to return to home station, pack up, arrange for household moves, out-process, take leave, and so forth. Second, some soldiers are stabilized in their current assignment; that is, they are protected against deployment because they have recently returned from other overseas duty (dominated in this case by Korea rotations).[3]

Taken together, these factors increase the total forecast nondeployability rate to nearly 40 percent.[4] This same general pattern is uniform across all posts; it is not unique to any one area or element of the force.

This high rate of nondeployability has effects that cascade throughout the units and the personnel system. First, nondeployability causes many personnel exchanges among deploying units and stay-behind units, leading to personnel turbulence. Second, the movement of people degrades the readiness of units that stay behind. Third, to control these phenomena the Army adopts various short-term tactics, such as "fencing" units soon expected to deploy (preventing movements of soldiers out, for example, to their next permanent station). Thus, turbulence rotates across installations. Fourth, as the system strains to meet these demands, it is also unable to fill some critical needs—such as maintaining high fill rates at overseas stations—while keeping soldiers stabilized at their assigned posts and together with their families. Below we discuss each of these phenomena in more detail.
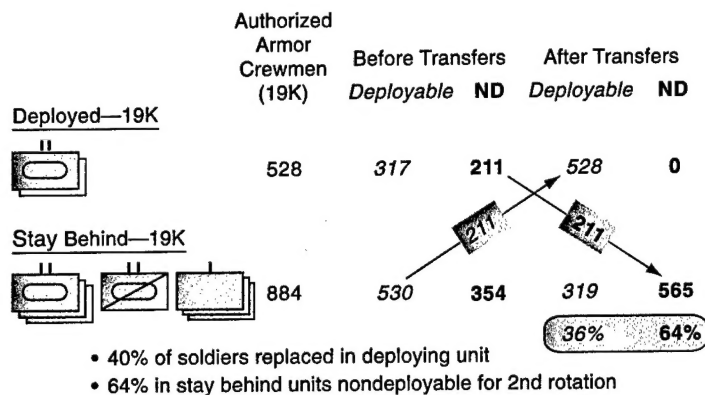
| | Authorized Armor Crewmen (19K) | Before Transfers | | After Transfers | |
		Deployable	ND	Deployable	ND
Deployed—19K	528	317	211	528	0
Stay Behind—19K	884	530	354	319	565
				36%	64%

- 40% of soldiers replaced in deploying unit
- 64% in stay behind units nondeployable for 2nd rotation

Figure 1—Replacing Soldiers Creates Extensive Turbulence

NONDEPLOYABILITY LEADS TO EXTENSIVE PERSONNEL TURBULENCE

Figure 1 illustrates the first-order effect: turbulence. It shows what the 1st Cavalry Division faced when it began planning for its first brigade rotation to Bosnia. Note that the rotation was not actually done this way; in the end, 1st Cavalry drew upon many more sources than just those personnel within its division. But this figure demonstrates the magnitude of the challenge and why it is not feasible to limit the effects to one division.

Examining the situation for armor crew members, whose position is designated as "19K," we find authorizations for 528 19Ks in the two deploying armor battalions. Another 884 19Ks in other units within the division were not scheduled to deploy to Bosnia. But of the 528 required to deploy, with a 40 percent nondeployability rate, only 317 could actually go. The remaining 211 nondeployable soldiers had to move to a stay-behind unit, and 211 other soldiers from those units had to move into the deploying units.

NONDEPLOYABILITY DEGRADES THE READINESS OF STAY-BEHIND UNITS

As a result of this process, 64 percent of the soldiers in the stay-behind units would be nondeployable for Bosnia.

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[2]These required moves arise from permanent changes of station (PCS) and expiration of term of service (ETS). PCS moves are essential to rotate military personnel between the United States and overseas locations and to provide breaks between overseas duty periods (among other reasons). ETS dates are an essential feature of limited contracts for military service; obviously the Army cannot retain a person overseas in peacetime beyond his or her ETS date.

[3]Other analysis indicated that the nondeployability rate cannot be reduced a great deal by altering these criteria. For example, reducing the PCS/ETS period from 135 days to 90 days and reducing stabilization periods from 1 year to 6 months would reduce the total nondeployability rate by only six percentage points.

[4]The 40 percent nondeployability rate reflects what would happen under a "business as usual" procedure. In the actual execution of the deployments, the Army took some extraordinary steps to reduce nondeployability at posts that were scheduled to support upcoming deployments. For example, those posts were "fenced" to prevent people from leaving, soldiers with long times to PCS or ETS were sent "inbound" to those locations, and fill rates were raised. Such actions eventually reduced nondeployability rates at a small number of posts, but they imposed burdens elsewhere and disrupted the overall personnel system.
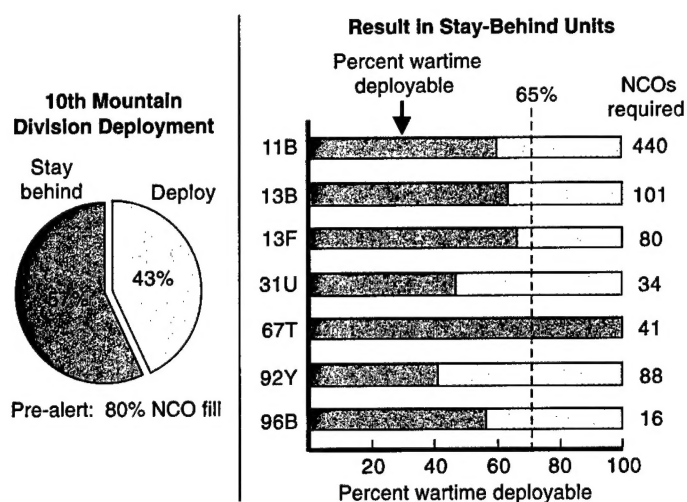
Figure 2—Nondeployability Problems Affect the Readiness of
Stay-Behind Units

Obviously, that would complicate supporting a successive deployment immediately following the first brigade's rotation (which, in fact, is what 1st Cavalry had to do). Naturally, to avoid this situation the deploying units were filled from sources beyond 1st Cavalry: other units at Fort Hood and "passbacks" that were filled from other installations—creating ripple effects well beyond Fort Hood.

Other installations not as large as Fort Hood face an even more difficult problem. Figure 2 illustrates the situation we anticipated for Fort Drum (the 10th Mountain Division), which supported the next rotation after Fort Hood. This figure shows how the effects on stay-behind units are magnified at smaller posts, where the demand is proportionately greater, and in key subelements of the force (such as specific grades and military occupational specialties (MOSs)).

The 10th Mountain Division, for example, was initially expected to deploy soldiers representing about 43 percent of its authorizations. However, at the outset only about 80 percent of the NCO authorizations at Fort Drum were filled. These two factors—a high fraction to be deployed and a low fill rate—drove the results in the right-hand portion of Figure 2.[5]

The right side of the figure shows the resulting rates of wartime deployability among NCOs in a range of MOSs in the stay-behind units. In many MOSs, the wartime deployability rate drops below 65 percent (a readiness rating of "P3") in the stay-behind units. This is the direct result of the drain of personnel into the deploying units and the countermovement of nondeployable soldiers into the stay-behinds.

THE TRADEOFF BETWEEN OVERSEAS FILL RATES AND CONUS STABILIZATION

A final secondary effect concerns the ability of the personnel system to support the individual rotation requirements of the whole Army, and an important related problem: keeping enough NCOs available in the continental United States (CONUS) to rotate to permanent stations overseas.

To begin with, we identified the status of all NCOs in the force (about 173,000). Then, to isolate the pool of NCOs who are actually available to rotate outside the continental United States (OCONUS), we subtracted various groups of soldiers who by policy should not be rotated overseas for a specified time. For example, at any given time some soldiers are in special assignments of fixed length (recruiters, drill instructors, supporting reserve components, etc.), and some are in training and other holding accounts.[6] In addition, some are stabilized as a result of a previous overseas tour or a recent stint in a high-priority assignment (such as recruiting duty) that guarantees stability for a period of time in the next assignment. Finally, some soldiers are "fenced." For example, in 1998–1999 fences were established at Forts Hood, Drum, Riley, and Carson during designated periods, to prevent their soldiers from being reassigned elsewhere while the installation was preparing for an upcoming Bosnia deployment. Also some special groups are typically fenced against all Bosnia deployments, such as elements of XVIII Corps, special operations, and 4th Infantry Division (the site of the Army's "Force XXI" experiments with technology advances and digitization).

The result is that not enough NCOs are available to both (a) meet desired fill rates in OCONUS units and (b) meet desired goals for keeping people on station after burdensome tours. One of these goals must be traded off for the other.

Figure 3 shows the result of a preliminary analysis on that tradeoff. The Y-axis represents the fill rate for OCONUS units (in Europe and Korea). The X-axis represents the number of years that the Army can keep a stabilized soldier on station in CONUS (after an assignment calling for subsequent stabilization).

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[5]This figure portrays the situation given plans in late 1998. Since that time, evolving plans reduced the fraction deployed, altering this picture.

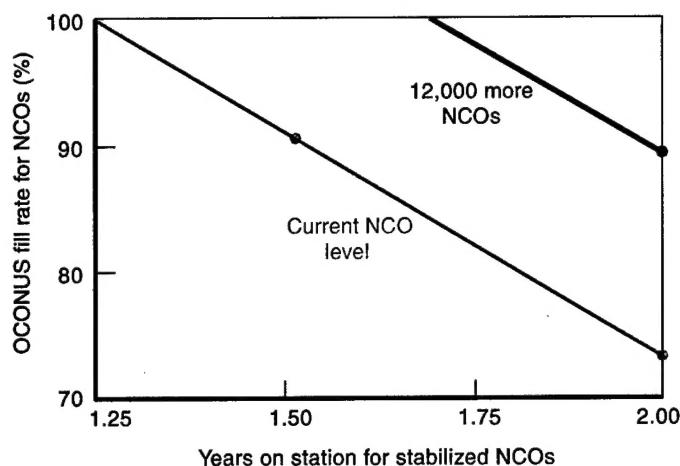[6]These accounts include, for example, trainees, students, transients, and hospitalized patients.

Figure 3—Tradeoffs Between OCONUS Fill Rates and CONUS Stabilization Times

The green line shows the situation given conditions and strength levels for NCOs that were current in spring 1999. Under these conditions, if the Army wants to achieve 90 percent fill overseas, it must accept a figure of about 1.5 years for stabilization. In contrast, the Army's goal calls for a 3-year period of stabilization. Alternatively, we can move to another point on the green line. For example, we could attempt to achieve a full two years' stabilization—but only at the cost of having 73 percent fill in units overseas.

This situation is created primarily by the presence of the Bosnia deployment. It causes several classes of soldiers to become ineligible for OCONUS tours at any given time: those in Bosnia, those who have recently returned and are now stabilized, and those at installations that are fenced to prepare for upcoming deployments. If those classes were eligible, the Army would be in a position to support OCONUS fill rates at 90 percent while sustaining a two-year normal stabilization period.

Of course, in principle there is the option of increasing the Army's structure to get more NCOs, attempting to "buy out" the problem. Although this may not seem politically feasible, we wanted to know how much it would take to execute this buyout. In the example above, our rough calculations indicated that by getting 12,000 more NCOs, the Army could move to the situation illustrated by the upper line, where it could achieve, say, a 90 percent fill rate with two years' stabilization.

Analysis of these phenomena is continuing, so we have not yet drawn firm conclusions. But it is fairly clear that even small deployments—Bosnia is only 7,000 people—have larger ripple effects across the entire force. Second, they create extensive turbulence, which has the potential to undermine Army readiness and adversely affect the quality of life for soldiers and their families. Third, these effects spread across the Army. They do not limit themselves to a few specific subelements. For example, we cannot solve these problems by buying more support structure at the expense of combat structure, or vice versa. Fourth, the end result is to increase pressure on Army end strength and structure. The dynamics of this system clearly use more people than a static viewpoint would suggest. Finally, there is no single evident solution. All solutions that we have considered involve tradeoffs against goals that are widely held to be important, both by the Army and DoD.

NEW OPTIONS FOR IMPROVING ARMY DEPLOYMENTS

To assess the system's current behavior and its underlying drivers, analysts need a model to describe personnel flows and capture the phenomena associated with deployments such as Bosnia. That model, of course, should also be able to consider alternative strategies that might help solve the problems. For example, we have begun to consider options such as

- Changing from unit rotations to individual rotations to Bosnia;

- Drawing more upon personnel in the Reserve Components;

- Supporting deployments directly from overseas locations (such as forces stationed in Europe); and

- Somewhat more radically, instituting individual replacements but using more volunteers, perhaps compensating them at a higher rate (just as we now pay enlistment and reenlistment bonuses).

As we move toward assessing such options, we also need a clear set of criteria for scoring the good and bad effects they may create. The major criteria would include unit integrity, deployability, and readiness; soldier and family quality of life; retention; and cost. By suggesting these alternatives, we hope to stimulate discussion about the possible options and how the Army could choose among them.
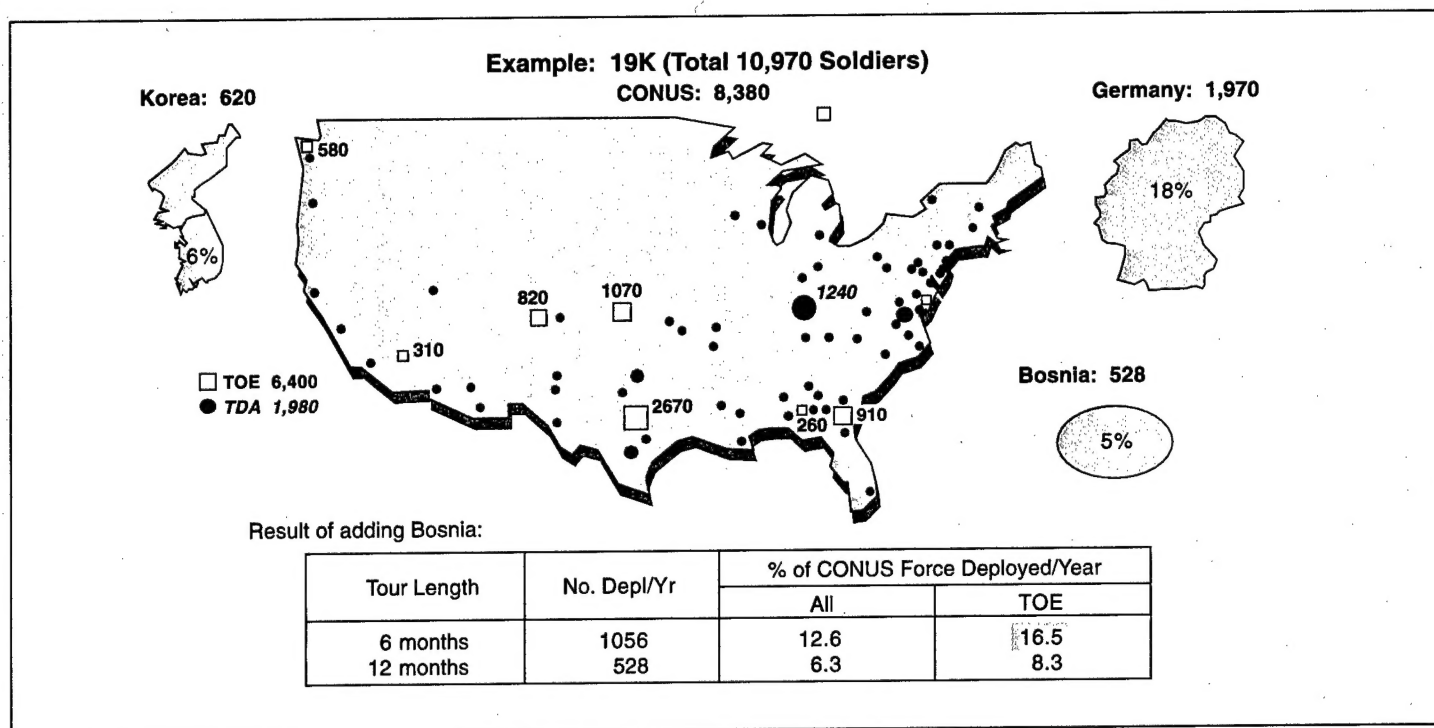
Example: 19K (Total 10,970 Soldiers)

Korea: 620   CONUS: 8,380   Germany: 1,970

6%   18%

□ TOE 6,400
● TDA 1,980

Bosnia: 528   5%

Result of adding Bosnia:

Tour Length	No. Depl/Yr	% of CONUS Force Deployed/Year	
		All	TOE
6 months	1056	12.6	16.5
12 months	528	6.3	8.3

Figure 4—A Possible Alternative: Individual Rotations

By way of illustration, we can sketch an approach to considering one alternative, namely individual replacements. Figure 4 indicates how this might work, again illustrating the situation for 19K soldiers.

At present, the Army has about 18 percent of its 19K soldiers in Europe, 6 percent in Korea, and the remainder in CONUS. Note, however, that a substantial fraction of the CONUS soldiers are stationed where there are no TOE units.[7] For example, 1,240 19Ks are stationed at Fort Knox alone, a TDA post. Altogether 6,400 19Ks reside at TOE locations and 1,980 at TDA locations (from which the Army would probably not want to draw persons to rotate to Bosnia).

The table at the bottom of Figure 4 shows how much of the CONUS force would be needed, and how often, to support individual replacements for Bosnia. For example, if we retained the six-month tour to Bosnia (current policy), that would require 1,056 soldiers per year. And that, in turn, would require the Army each year to withdraw 16.5 percent of soldiers in all TOE units for a tour to Bosnia. In other words, during one year in the typical stateside unit, 16.5 percent of the soldiers would be absent for a six-month period in Bosnia. This suggests a potential readiness effect that the Army would need to consider carefully before accepting. In effect, it would create a significant amount of turbulence in all units, in place of the appreciably greater amount of turbulence now being concentrated in fewer units.

These calculations suggest the essential problem facing the Army (and the other services): The existing force structure, by and large, is already committed to certain functions and locations. To undertake new functions—such as the recent deployments to Bosnia, Kosovo, Haiti, or Somalia—the Army must divert some personnel who are already committed. But, as we have illustrated, it is not simple to deduce which personnel will be diverted or which units will be affected, let alone to quantify the effects on unit readiness. What is certain is that the effects range well beyond the particular units that are selected to deploy. The ramifications for the entire force are thus far unclear, but they are likely to figure prominently in future debates about national defense posture.

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[7]Units defined as TOE (Table of Organization and Equipment) are the Army's primary deploying and warfighting entities. Units defined as TDA (Table of Distribution and Allowances) provide institutional support or training but do not generally deploy.